

Report No. 21-1025 Prepared for Welder Leshin LLP In the Matter of MODA Ingleside Oil Terminal, LLC

VS.

RIVERSIDE



Report - June 15, 2022

PMC LLC 998C Old Country Road No.183, Plainview New York 11803

Exhibit C



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2.0 INTRODUCTION

At the request of Welder Leshin LLP, and on behalf of the Owners & Managers of the crude oil tanker RIVERSIDE, this report has been compiled to report and opine upon the cause of the damage sustained to the vessel due to an allision with the MODA facility at Ingleside, Texas.

This includes a rebuttal of some of the opinions expressed by BJ Higgins in the DMCG Project Solutions Expert report dated April 15, 2022¹ and the report of Captain Jay Rivera dated April 8, 2022.²

¹ Bates Nos. 64755 01053 - 01068

² Bates Nos. 64755 01007 - 01050



2.1 <u>Credentials</u>

The credentials of the undersigned, with respect to rendering an opinion in this matter are as follows: -

- 2.1.1 Forty plus years' experience gained in vessel operation and maintenance, loss prevention, surveying and casualty investigation and repairs, including over 20 years in a senior managerial capacity. Positions held have involved coordination and oversight of worldwide surveying and consulting operations, quality control, and dispute resolution.
- 2.1.2 An emphasis of field experience of forensic investigation into a wide range of major casualties, in particular machinery and hull damages on behalf of Underwriters and other parties.
- 2.1.3 Retained technical Consultancy / Superintendence involving direct assistance & guidance to Owner's on the operation of their vessels within the requirements and stipulations of various regulatory bodies including Classification Societies.
- 2.1.4 Master of Science Degree (MSc) in Maritime Studies from the University of Portsmouth, UK.
- 2.1.5 Department of Transport (DOT) Class One Certificate of Competency, Marine Engineer Unlimited Horsepower.
- 2.1.6 Registered as a Chartered Engineer (CEng) with the UK Engineering Council.
- 2.1.7 Registered as a Chartered Marine Engineer (CMarEng) and a Fellow of the Institute of Marine Engineering, Science and Technology (FIMarEST).

2.1.8 **Qualifications Summary:**

- Master of Science (MSc) Degree, Maritime Studies, University of Portsmouth, UK
- UK DOT Class One Certificate of Competency Marine Engineer, Unlimited Horsepower
- National Diploma in Marine Engineering with Endorsements
- Chartered Engineer (CEng) the U.K. Engineering Council



- Chartered Marine Engineer (CMarEng), the Institute of Marine Engineers Science & Technology
- Registered Marine Surveyor (RMS) International Institute of Marine Surveyors (IIMS)

2.1.9 **Professional Affiliations Summary**;

- Fellow, Institute of Marine Engineering Science & Technology (FIMarEST)
- Member, Society of Naval Architects & Marine Engineers (SNAME)
- Member International Institute of Marine Surveyors (MIIMS)
- Member, Maritime Law Association US (non-Lawyer)
- Associate Member, the Association of Average Adjusters of the United States & Canada. Elected Chairman of the Association of Average Adjusters of the United States year 2005 to 2006
- Associate Member, American Institute of Marine Underwriters (AIMU); accredited (New York State) AIMU Hull & Machinery course instructor
- Past member, American Bureau of Shipping, Special Committee on Ship Operations
- Past member, Ship Technical Committee, International Group of P&I Clubs

2.2 <u>Career Timeline</u>

2.2.1 1975 to 1989 - Trained and served on merchant vessels trading worldwide as Engineer Cadet and in ranks from Junior Engineer up to and including Chief Engineer Officer.

- 2.2.2 1989 Joined the Salvage Association³, serving as Staff Surveyor in the Antwerp Office carrying out casualty investigation and other surveying duties worldwide.
- 2.2.3 1992 Transferred to the New York Office of the Salvage Association in carrying out surveys on behalf of Underwriters and other instructing Principals in most countries in the Americas.

³ The Salvage Association was a professional body formed in 1856 by the Lloyds of London Insurance market to carry out investigations and surveys on their behalf. The Association became the largest casualty surveying organization in the world carrying out surveys worldwide, guided by the motto on the seal of its Royal Charter - 'Quaerite Vera' - 'Seek the Truth'.



- 2.2.4 2001 Appointed Regional Manager of BMT Salvage Ltd. (the SA) for the Americas; responsible for all surveying operations throughout North, South & Central America, the Caribbean, Pacific region and Canada.
- 2.2.5 2001 Appointed as member of the ABS Special Committee on Ship Operations.
- 2.2.6 2005 Appointed Vice-President and Principal Surveyor, Technical Services, Shipowners Claims Bureau, Managers of the American P&I Club.
- 2.2.7 2005 Appointed as member of the Ship Technical Committee of the International Group of P&I Clubs
- 2.2.8 2005 2006 Elected Chairman of the Association of Average Adjusters of the United States.
- 2.2.9 2007- Opened and established Noble Denton New York office of Marine Casualty Investigation division as President.
- 2.2.10 2012 Executive V.P. | Chief Surveyor, Atlantic Marine Associates (AMA) Inc., Consulting Services, New York.
- 2.2.11 2020 Chief Surveyor, Charles Taylor Inc.
- 2.2.12 2021 Director & Chief Surveyor, Poulson Marine Consultants PMC LLC

Note; Full career details and qualifications are given in my C.V., forming Appendix A to this report.



3.0 CASE BACKGROUND - THE INCIDENT

The RIVERSIDE is a crude-oil tanker with the following principal particulars:-

Built : 2009

Builders : STX Jinhae South Korea

Gross Tonnage : 62,856

Deadweight : 115,445 tonnes

Length : 249.99 metre

Breadth : 44.03 metre

Main Engine : STX B&W 6S60MC – C8 slow speed direct coupled engine

developing a maximum output of 14,280 KW at 105 RPM

Owners : Glory Riverside Navigation Ltd. Malta

Managers : Thome Ship Management PTE Ltd., Singapore

Classification : DNV +1A1 Oil Carriage

Certificates : All valid at the time of the incident

DOC : Certification valid till January 11, 2023

ISM SMC : Certification valid till September 11, 2025

On March 11, 2021, the vessel arrived offshore Texas in preparation for berthing at the EPIC Terminal Corpus Christi and had, in compliance with the requirements of entering the ECA⁴ changed over the main engine fuel supply from very low sulphur fuel oil to ultra-low sulphur gas oil to comply with the applicable 0.1% sulphur content regulations of the IMO⁵.

Thereafter the vessel drifted for some time awaiting orders.

Orders were then received to proceed inbound to Corpus Christi at which time the normal process of starting the main engine was followed but starting was hampered by the engine, whilst turning normally on air, was not starting and running on fuel.

⁴ Emission Controlled Area

Ellission Controlled Alea

⁵ International Maritime Organization (Sulphur regulations mandated in 2020)



The Chief Engineer determined that the problem lay with the fact that the fuel oil cooler or chiller was not in service⁶. The engine was rotating on air but did not then pick-up and run on fuel. According to the transcript of his deposition testimony⁷, there was no problem with the main engine air distributor at this time, which is understandable as the engine was rotating on air without any problem. The Chief Engineer made adjustments to increase the amount of fuel delivery during the starting cycle and all was well.

The vessel then proceeded without further manoeuvring issues to berth at the EPIC terminal Corpus Christi on March 13, 2021 to load a cargo of crude oil for discharge at SINES, Portugal.

Upon completion of loading operations, the vessel departed the EPIC terminal on or around 11.00 hours on March 15, 2021 with Pilot on board. Again, the main engine started and ran without issue.

During the outbound transit, the vessel encountered the NORDIC AQUARIUS which was departing the MODA terminal and entering the main channel ahead of the RIVERSIDE.

The RIVERSIDE took evasive action as advised and directed from the navigating bridge but following some reported operational issues with the main engine - which failed to start after being ordered stopped, to avoid colliding with the NORDIC AQUARIUS – ultimately, unavoidably, struct the MODA facility resulting in damage to the terminal and the vessel's hull and it's appurtenances.

The RIVERSIDE was surveyed thereafter by the respective parties including regulatory bodies and on behalf of hull and machinery Underwriters and the vessel's P&I Club.

The vessel was then moved to a lay-berth at Corpus Christi, at which time an MAN service engineer, Jesper Petersen, attended from March 16th to March 20th to assist with determination of the cause of the engine's failure to start on this occasion.

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⁶ Chief Engineer Lloyd V. D'Almeida deposition testimony page 20. "the engine was completely successfully turning on air" Fuel coolers or chillers are a retrofitted component of engine fuel systems introduced – of necessity - to cope with the recent (2020) regulatory mandated use of ultra-low sulphur fuels in ECA's. They are utilised to cope with the very low viscosities of supplied distillate oils that the fuel injection systems of ships designed to start, run and operate on heavy fuel oils or HFO. Current ISO standards for fuel (ISO 8217) do not stipulate a minimum viscosity for fuels, only a maximum.

⁷ Chief Engineer Lloyd V. D'Almeida deposition testimony page 32



Jesper Petersen's report summary reads as follows:-

When the vessel was still moored alongside the pier, engine operations was prohibited. As such we could not test start the engine to check various systems that could have caused the incident. However, a static test of all the pneumatic control valves related to the start sequence (except the starting air distributor and related 30 bar pneumatic control valves was completed without finding any issue in their operation.

Vessel finally departed to the anchorage and the engine operated without issues However, during preliminary test at anchorage engine failed to start in ahead as no starting air was applied.

The pneumatic control valves incl the 30 bar valves supplying air to the starting air distributor had all shown correct function since the engine started the first time when leaving the pier. However, after repeated starting attempts at anchor it was quickly noted that starting air distributor actuator No. 6 did not move at all. After removing and dressing up the actuator and cylinder, the engine was test started again. This time, actuator No.6 was found to operate normally. Engine was tested several times in both directions from the bridge, ECR and local control without any observed misfire.

The engine tested in Ahead / Astern from the Bridge, ECR and Local Control.

The test was conducted by bringing the engine to DS Ahead and then to crash Astern from all three control stations.

All three attempts were done to the satisfaction of the DNV surveyor.

The determination of the MAN service engineer that the engine starting problem was due to the air start distributor problem, illustrates that this was an issue that had no connection with the starting problems encountered previously when offshore on March 11, 2021.



4.0 SURVEY

On March 24, 2022, the undersigned boarded the RIVERSIDE while lying afloat, alongside at IMTT St. Rose Berth No.2 to familiarize myself with the vessel, particularly it's propulsion machinery and systems. During my survey, I met with the Captain, the Chief Engineer and other officers.

I surveyed the engine room in the company of the 2nd Engineer and left the vessel at around 18.00 that day.

Also during my survey I traced all of the machinery space compressed air systems, in particular those relevant to the case under review.

An illustrative selection of relevant photographs taken during survey on March 24, 2022 follows below. The vessel was found to be well maintained and well managed.



RIVERSIDE main air receivers and compressed air distribution systems





RIVERSIDE main air receivers and control air dryer



RIVERSIDE main engine starting air distributor





Control air system



Compressed air system draining instructions



5.0 THE MAIN ENGINE

5.1 General

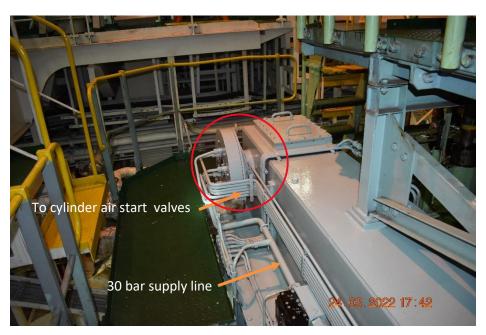
The vessel's main engine is a conventional, slow speed direct coupled diesel oil engine driving a single fixed propeller directly through intermediate shafting.

It is an STX B&W 6S60MC – C8 six cylinder engine developing a maximum output of 14,280 KW at 105 RPM.

5.2 Starting Air and Pneumatic Control Air Systems

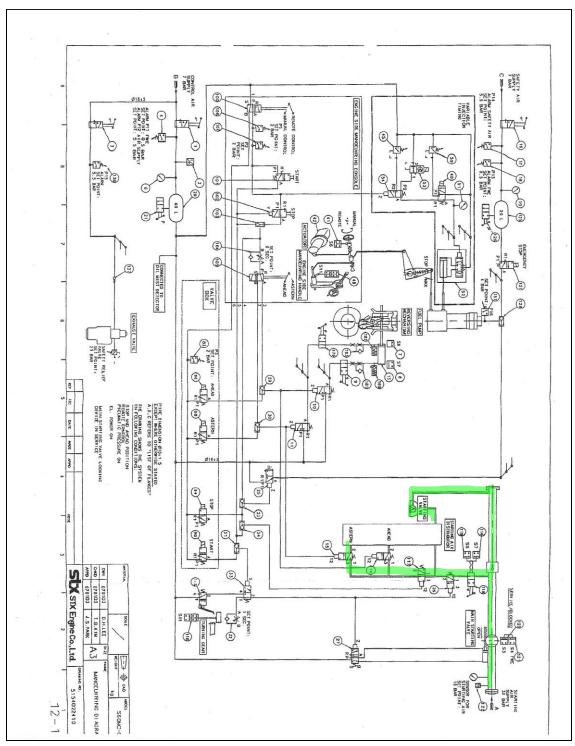
The vessel has both a control air and starting air system as depicted in the builders STX linediagram below.

The main engine starting air distributor is affixed to the main engine driven stub-shaft and therefore mechanically always angularly aware of the distributive requirements of the system to open the starting air valve of whichever cylinder is required to rotate the engine at any particular time.



Air distributor, supply lines to air start valves and supply from the 30 bar main





The RIVERSIDE STX Manouevring Diagram

Air supply to the starting air distributor highlighted



6.0 SUMMARY OF DOCUMENTATION REVIEWED

The following documentation was reviewed and insofar as it relates to the determination of cause in the case under review, is relied upon in the compilation of this report and opinion(s) contained herein.

| Item | Bates No. |
|--|---------------------|
| STATEMENTS AND DEPOSITIONS | |
| Ben Watson Statement and Exhibits | |
| Captain Cory Fontenot Oral and Videotaped Deposition and Exhibits | |
| Igor Petrov Remote Videoconference Oral and Videotaped Deposition and | |
| Exhibits | |
| Georgy Ustyuzhanin Remote Oral / Videotaped Deposition and Exhibits | |
| Captain Justin Anderson Remote Oral / Videotaped Deposition and Exhibits | |
| Captain Jay Rivera Expert Witness Testimony | |
| Captain Jay Rivera Expert Preliminary Written Report – Riben Marine | 64755-01010 - 01050 |
| B.J. Higgins Expert Report – April 15, 2022 | 64755-01051 - 01068 |
| McLaren Engineering Group Expert Report | 64755-01069 - 01095 |
| Lloyd V. D'Almeida Chief Engineer Deposition and Exhibits | |
| | |
| TECHNICAL DOCUMENTS | |
| Plaintiff MODA's First Amended Complaint | 64755-45407420 |
| Plaintiff MODA's Second Amended Complaint | 64755-45506962 |
| RIVERSIDE interests' Answers and Objections to OCY Aquarius Ltd's First | 339634 |
| Set of Interrogatories | |
| Agreement for Ship Management | 02539 - 02558 |
| Air Start System | |
| MAN Energy Solutions Invoice | 03040 - 03043 |
| DNV Survey & Trial Report | 03044 - 03097 |
| GARD Certificate of Entry | 03098 - 03103 |
| Gen Arrangement | 03105 |
| STX Engine Manual | 03106 - 05124 |



| THOME Circular re Allision 05242 - 05245 THOME Minutes of Meeting Post Allision 05246 - 05247 Engine Room Log Book 05320 - 05330 THOME Master Pilot Exchange Form 05331 - 05334 Bay Houston Tug Terms 05335 - 05338 THOME Monthly Safety Report 05348 - 05352 THOME Chief Engineer Handover Form 05353 - 05462 RIVERSIDE Bell Book 05484 - 05496 Report of Allision Tests 05498 - 05510 RIVERSIDE Maintenance 05511 - 05514 Cargo Receivers 05515 - 05600 HYUNDAI 05960 - 06001 Rolls-Royce Instruction Manual for Steering Gear 06002 - 06252 STX Main Engine 06276 - 06769 USCG PSC Report 06770 - 06789 USCG PSC Report 06797 - 06826 Fuel Analysis Operational Report Date 19-Aug-2020 06948 - 07127 VPS Fuel Analysis Operational Report 12-Aug-2020 06948 - 07127 Maintenance on Board 07128 - 07164 THOME Purchase Orders 07165 - 07249 STX Yard Supervision of Main Engine Maintenance 07250 - 07278 DNV Survey Statement | Item | Bates No. |
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| Fuel Analysis Operational Report Date 19-Aug-2020 VPS Fuel Analysis Operational Report 12-Aug-2020 Maintenance on Board THOME Purchase Orders STX Yard Supervision of Main Engine Maintenance DNV Survey Statement Welder Leshin Letter Reply Letter from Eastham Agent Emails re MAN attendance RIVERSIDE'S Interests First Amended Cross-Claim Against M/V Nordic Aquarius' Interests Nordic 0570-0669 Nordic's response to correspondence, supplemental Production RIVERSIDE Defendants' Second Supplemental Rule 26 Initial Disclosures 06948 - 07127 06948 - 07127 06948 - 07127 06948 - 07127 07127 0728 - 07249 07250 - 07278 07250 - 07278 07250 - 07278 07290 - 07292 Welder Leshin Letter 07293 - 07299 07303 - 07302 340518 NORDIC 0570 - 0669 | USCG PSC Report | 06770 - 06789 |
| VPS Fuel Analysis Operational Report 12-Aug-2020 Maintenance on Board THOME Purchase Orders STX Yard Supervision of Main Engine Maintenance DNV Survey Statement Welder Leshin Letter Reply Letter from Eastham RIVERSIDE'S Interests First Amended Cross-Claim Against M/V Nordic Aquarius' Interests Nordic 0570-0669 Nordic's response to correspondence, supplemental Production RIVERSIDE Defendants' Second Supplemental Rule 26 Initial Disclosures 07127 07128 - 07164 07127 07949 07250 - 07278 07279 - 07292 07292 - 07292 07303 - 07299 07303 - 07302 340518 NORDIC 0570 - 0669 NORDIC 0570 - 0669 | SIRE Report | 06797 - 06826 |
| Maintenance on Board 07128 - 07164 THOME Purchase Orders 07165 - 07249 STX Yard Supervision of Main Engine Maintenance 07250 - 07278 DNV Survey Statement 07279 - 07292 Welder Leshin Letter 07293 - 07299 Reply Letter from Eastham 07300 - 07302 Agent Emails re MAN attendance 07303 - 07308 RIVERSIDE'S Interests First Amended Cross-Claim Against M/V Nordic Aquarius' Interests Nordic 0570-0669 NORDIC 0570 - 0669 Nordic's response to correspondence, supplemental production RIVERSIDE Defendants' Second Supplemental Rule 26 Initial Disclosures 339452 v.3 | Fuel Analysis Operational Report Date 19-Aug-2020 | 06948 - 07127 |
| THOME Purchase Orders STX Yard Supervision of Main Engine Maintenance DNV Survey Statement Welder Leshin Letter Reply Letter from Eastham Agent Emails re MAN attendance RIVERSIDE'S Interests First Amended Cross-Claim Against M/V Nordic Aquarius' Interests Nordic 0570-0669 Nordic's response to correspondence, supplemental production RIVERSIDE Defendants' Second Supplemental Rule 26 Initial Disclosures 07250 - 07249 07250 - 07278 07279 - 07292 07303 - 07299 07300 - 07302 07303 - 07308 NORDIC 0570 - 0669 NORDIC 0570 - 0669 | VPS Fuel Analysis Operational Report 12-Aug-2020 | 06948 - 07127 |
| STX Yard Supervision of Main Engine Maintenance DNV Survey Statement Welder Leshin Letter Reply Letter from Eastham Agent Emails re MAN attendance RIVERSIDE'S Interests First Amended Cross-Claim Against M/V Nordic Aquarius' Interests Nordic 0570-0669 Nordic's response to correspondence, supplemental production RIVERSIDE Defendants' Second Supplemental Rule 26 Initial Disclosures 339452 v.3 | Maintenance on Board | 07128 - 07164 |
| DNV Survey Statement Welder Leshin Letter 07293 - 07299 Reply Letter from Eastham 07300 - 07302 Agent Emails re MAN attendance RIVERSIDE'S Interests First Amended Cross-Claim Against M/V Nordic Aquarius' Interests Nordic 0570-0669 Nordic's response to correspondence, supplemental production RIVERSIDE Defendants' Second Supplemental Rule 26 Initial Disclosures 339452 v.3 | THOME Purchase Orders | 07165 - 07249 |
| Welder Leshin Letter 07293 - 07299 Reply Letter from Eastham 07300 - 07302 Agent Emails re MAN attendance 07303 - 07308 RIVERSIDE'S Interests First Amended Cross-Claim Against M/V Nordic 340518 Aquarius' Interests Nordic 0570-0669 Nordic's response to correspondence, supplemental production RIVERSIDE Defendants' Second Supplemental Rule 26 Initial Disclosures 339452 v.3 | STX Yard Supervision of Main Engine Maintenance | 07250 - 07278 |
| Reply Letter from Eastham Agent Emails re MAN attendance RIVERSIDE'S Interests First Amended Cross-Claim Against M/V Nordic Aquarius' Interests Nordic 0570-0669 Nordic's response to correspondence, supplemental production RIVERSIDE Defendants' Second Supplemental Rule 26 Initial Disclosures 3730 - 07302 07300 - 07302 07303 - 07308 NORDIC 0570 - 0669 NORDIC 0570 - 0669 RIVERSIDE Defendants' Second Supplemental Rule 26 Initial Disclosures | DNV Survey Statement | 07279 - 07292 |
| Agent Emails re MAN attendance RIVERSIDE'S Interests First Amended Cross-Claim Against M/V Nordic Aquarius' Interests Nordic 0570-0669 Nordic's response to correspondence, supplemental production RIVERSIDE Defendants' Second Supplemental Rule 26 Initial Disclosures 339452 v.3 | Welder Leshin Letter | 07293 - 07299 |
| RIVERSIDE'S Interests First Amended Cross-Claim Against M/V Nordic Aquarius' Interests Nordic 0570-0669 Nordic's response to correspondence, supplemental production RIVERSIDE Defendants' Second Supplemental Rule 26 Initial Disclosures 340518 NORDIC 0570 - 0669 RIVERSIDE Defendants' Second Supplemental Rule 26 Initial Disclosures | Reply Letter from Eastham | 07300 - 07302 |
| Aquarius' Interests Nordic 0570-0669 Nordic's response to correspondence, supplemental production RIVERSIDE Defendants' Second Supplemental Rule 26 Initial Disclosures 339452 v.3 | Agent Emails re MAN attendance | 07303 - 07308 |
| Nordic 0570-0669 Nordic's response to correspondence, supplemental production RIVERSIDE Defendants' Second Supplemental Rule 26 Initial Disclosures 339452 v.3 | RIVERSIDE'S Interests First Amended Cross-Claim Against M/V Nordic | 340518 |
| Nordic's response to correspondence, supplemental production RIVERSIDE Defendants' Second Supplemental Rule 26 Initial Disclosures 339452 v.3 | Aquarius' Interests | |
| RIVERSIDE Defendants' Second Supplemental Rule 26 Initial Disclosures 339452 v.3 | Nordic 0570-0669 | NORDIC 0570 - 0669 |
| | Nordic's response to correspondence, supplemental production | |
| STX Engine Manual 04813 | RIVERSIDE Defendants' Second Supplemental Rule 26 Initial Disclosures | 339452 v.3 |
| | STX Engine Manual | 04813 |



| Item | Bates No. |
|--|----------------|
| STX Main Engine No Notation | |
| STX Main Engine | |
| Starting Air Distributor | |
| Starting Air System | |
| | |
| REPORTS | |
| HSR MAN STX DNV Reports | 02921 - 03000 |
| Repair Accounts | 007309 - 07719 |
| RIVERSIDE Survey Photos and Videos 3.24.22 | |



7.0 SUMMARY & OPINION

A. Difficulties were experienced starting the main engine of the RIVERSIDE on March 12, 2022 while preparing for the inbound transit to the EPIC loading berth. The Chief Engineer determined, logically, that this was a fuel related issue as the engine was turning satisfactorily on air ahead and astern and after making adjustments to the fuel supply, engaging the fuel cooler or chiller, the engine started, ran and manoeuvred to the berth without problems. The air distributor was not touched.

Subsequently the engine was "blown through", per company SMS procedures, started and departed from the berth without problems.

- B. The DMCG report, authored by B.J. Higgins⁸ makes certain allegations against the vessel's Chief Engineer and the Owners Managers that I strenuously disagree with as it ignores certain crucial, factual evidence and is contradictory of itself.
 - a. There was <u>no malfunction of the starting air system</u> until the outbound incident on March 15th 2021.
 - b. The DMCG report is critical of the Chief Engineer's method of alleviating the starting fuel issue but then concludes that the starting failure on March 15th 2021 was all one continuing issue when clearly that's not the case.
 - c. The Chief Engineer was satisfied and reasonably so, that the starting problem offshore was fuel related which was proven when the fuel temperature issue was rectified. There was no reason to involve any 3rd parties at that juncture. Ship's engineers spend their lives investigating and solving problems without anyone else's help.
 - d. The engine was turning on starting air normally, right up until standby for departure from the berth on the outbound transit on March 15th 2021 when the engine was "blown through" in compliance with all normal procedures and then started, without any issues. Prior to departure there was no reason for the vessel to raise any concerns about the main engine's ability to start and manoeuver.

⁸ Bates Nos. 64755-01051 to 64755-01068



- e. The apparent "sticking" of the No.6 unit air distributor slide was an unforeseen anomaly which had no relation whatsoever to preceding events.
- f. There is no evidence whatsoever to support the supposition that the air supply to the air distributor was contaminated in any way. The findings of the MAN service engineer did not support this "suspected" theory, the origin of which is unknown.
- g. STX completely overhauled the air start and pneumatic control system in 2019 during which there was no indication of any contamination of the air supply. The condition of the air distributor at that time did not raise any concerns about the air supply or the distributor components.
- h. Post incident, the MAN service engineer made no further immediate recommendations concerning the air start system and said
 - "Recommendations: It is recommended to replace/overhaul all main engine pneumatic components every 2 years as per our recommendations. This means coming August this year." 9
- i. Although not directly relevant, the DNV report states that the pneumatic control air system was fully functional at the time of the incident. In any event, the air supply to the main engine starting air distributor comes from the 30 bar supply line that supplies the starting air valves, not through the control air system.
- j. A malfunction of the air distributor is not influenced by whether the engine command comes from the bridge, the engine control room, or the direct local console.
- k. I surveyed the RIVERSIDE personally on March 24, 2022. Notwithstanding the fact that further maintenance may have been effected in the meantime I can unequivocally state that the comments made in the 3rd paragraph on page 5 of the DMCG report¹⁰ "many issues which could have contributed to the incident" are completely erroneous.
- I. The DMCG report concludes / opines that "the vessel did not meet regulatory requirements, was not seaworthy nor fit for her intended service at the time of the incident." This statement has no merit whatsoever and is unsupported by anything reported by MAN or DNV. The vessel was fully classed at the time of the incident with no outstanding conditions and remained so.

⁹ Bates No. RIVERSIDE 02934

¹⁰ Bates No. 64755-01057

¹¹ Bates No. 64755-01057



- m. Overall, the incident was the culmination of several intervening factors, not just the temporary failure of the engine to respond.
- C. The Riben Marine report authored by Captain Jay Rivera¹² unfortunately also assumes that the initial problem associated with starting on March 12th 2021 was the same problem that manifested itself on March 15th 2021 which is not the case.

If the problem on March 12th had persisted, the vessel could not have proceeded to manoeuver to the berth and leave the berth as was the case. No amount of fuel system adjustment could compensate for the air distributor issue if that was the underlying original cause – which logically it was not.

Captain Rivera's report makes reference to a "buildup" on the "starting air valve" which we do not understand nor agree with.

We do however agree that that the actions of the NORDIC AQUARIUS played a major part in this casualty.

- D. The ship's crew followed the Owner's ISM compliant Safety Management System at all times before, during and after the incident under review.
- E. In the opinion of the undersigned the incident of March 15, 2021 was demonstrably not the result of or contributed to by any lack of due diligence on the part of the vessels Owners.
- F. The incident of March 15th 2021 was a fortuity that could not reasonably have been foreseen by the ships Command or the Owners Managers and was not solely the result of the main engine to respond to telegraph orders.
- G. I am aware of the requirement of Rule 26 Of The Federal Rules Of Civil Procedure: General Provisions Regarding Discovery: Duty of Disclosure.

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¹² Bates Nos. 64775 01997 - 01050



H. The foregoing is based on the information and documentation available at the time of writing. The Undersigned reserves the right to amend the opinion(s) contained herein, should additional information or evidence become available.

John S. Poulson MSc CEng CMarEng FIMarEST

This report is intended for the sole use of the person or organization to whom it is addressed and no liability of any nature whatsoever shall be assumed to any other party in respect of its contents. As to the addressee, neither the Company nor the undersigned shall be liable for any loss or damage whatsoever suffered by virtue of any act, omission or default (whether arising by negligence or otherwise) by the undersigned, the Company or any of its servants.



APPENDIX A

John S. Poulson; Curriculum Vitae

Poulson Marine Consultants PMC LLC Present

Chief Surveyor Providing independent, objective surveying & consulting services including expert testimony with an emphasis on major casualties, including: machinery failures, fires, groundings, collisions, etc., also providing superintendency services for Owners.

Clients include ship Owners and Managers, Underwriters, Brokers, Charterers, P&I clubs, Attorneys, Yacht Owners, Adjusters, Financiers, Builders / Repairers, and the offshore industry.

Charles Taylor Marine Technical Services 2020 – 2021

Chief Surveyor Providing independent marine surveying, consulting, claims handling, and expert witness services globally.

Atlantic Marine Associates, New York, NY 2012 - 2020

Chief Surveyor Providing independent marine surveying, consulting, claims handling, and expert witness services globally.

GL Noble Denton, New York, NY 2007 - 2012

President Opened and established the New York office for marine casualty investigation. Responsible for the coordination and oversight of surveying and consulting operations, quality control, and dispute resolution throughout the Americas for the company's marine casualty investigation sector, reporting principally to Underwriters concerned. Responsible for regional development of the business sector, and training and skill development of technical surveying personnel.

Performed field survey work; assisted attorneys; provided expert witness reporting and testimony. Performed casualty investigations with an emphasis on major casualties, including: collisions, fires, groundings, machinery failures, shipyard liabilities, and damages to third party installations. Warranty survey work included voyage and towage approvals, vessel moorings, and lay-ups / reactivations.



Shipowners Claims Bureau, Managers of the American P&I Club, New York, NY 2005 - 2007

Principal Surveyor - Loss Prevention, Risk Control & Technical Services Globally responsible for management of the survey department; monitored the condition and standard of Member vessels entered with the club, a fleet comprising several million tons. Liaison with claims handlers on technical and vessel third party liability issues. Conducted investigation into personal injury cases.

BMT Salvage Ltd (the SA), New York: Regional Office for the Americas 2001 - 2005

Regional Manager, the Americas Manager directly responsible for all aspects of company operations throughout Canada; North, South, and Central America; and the Caribbean. Responsibilities included overseeing all aspects of survey operations, quality control and dispute resolution. Performed casualty investigative survey work; assisted attorneys; provided expert witness testimony with depositions and court appearances in the U.S. and abroad; conducted field training and evaluation of personnel; conducted warranty survey work, including voyage and towage approvals, vessel moorings, and lay-up / reactivation.

Acted as liaison at board level, reporting to company directors. Responsible for regional development, including start-up of joint ventures; establishment of new office locations; acquisition of subsidiary surveying companies; recruitment of technical and administrative personnel; marketing; presentations to Underwriters and industry personnel; speaking as conference delegate at IUMI and IMCC; and giving guest presentations for technical instruction courses.

Held trusteeship of company pension and retirement funds, conducted general business management, administration.

The Salvage Association, Ltd., New York: Head Office for the Americas 1992 - 2001

Staff Surveyor Performed salvage, casualty, warranty, and condition surveys on the Eastern Seaboard, Great Lakes, and Gulf regions of the U.S.; Canada; the Caribbean; and Central and South America.

Conducted casualty work with an emphasis on major casualties, including: collisions, fires, groundings and particularly machinery failures; fixed and floating object damages, builder's risk and repair liability. Warranty work included vessel and power-barge mooring approvals, towage



and voyage approvals for vessels of various types and damages, fishing vessel risk assessment, and loss prevention engineering. Represented Underwriters on occasion in Europe and the Far East. Acted as regional manager for the Americas.

The Salvage Association, Antwerp Office, Belgium 1989 - 1992

Staff Surveyor Conducted salvage, casualty, warranty and condition surveys throughout Europe, West Africa, and the Middle East.

Reederei Roth, GmbH, Hamburg, Germany 1987 - 1989

Chief Engineer Responsible for all engineering matters, personnel, main and auxiliary machinery, and plant. Assisted shore-based technical management with preparation of dry dock and repair specification, including modification of vessel systems. Sailed on multipurpose vessels engaged in container line trades and carriage of bulk liquid cargoes.

Certified by Lloyds Register of Shipping for continuous survey of machinery (CSM).

Andrew Weir & Co. Ltd. (Managers of the Bank Line Ltd.) 1975 - 1987

Second Engineer Responsible for all operational matters pertaining to main and auxiliary machinery and plant. Assisted with dry-docking and repairs. Sailed on multipurpose vessels engaged in container line trades and carriage of bulk liquids. Specifically responsible for on-board care and handling of bulk edible oil cargoes.

Junior to Third Engineer Performed various watch-keeping and maintenance responsibilities. Sailed on container, general, and refrigerated cargo vessels.

EDUCATION & TRAINING

- South Shields Marine & Technical College | South Shields, UK
- National Diploma in Marine Engineering with Endorsements
- Shore-based and sea-going training
- University of Portsmouth | Portsmouth, UK
- Master of Science (MSc), Degree, Maritime Studies



QUALIFICATIONS

- UK Department of Transport (DOT) First Class Certificate of Competency: Marine Engineer,
 Unlimited horsepower
- DOT Second Class Certificate of Competency
- DOT Class Four Certificate of Competency
- Chartered Engineer (CEng): UK Engineering Council
- Chartered Marine Engineer (CMarEng): Institute of Marine Engineering, Science and Technology
- Registered Marine Surveyor (RMS): International Institute of Marine Surveyors (IIMS)

CAREER DEVELOPMENT

- GL Noble Denton: 'Leading with Integrity' Certificate of Completion
- Bond Solon, London: Excellence in Written Evidence & Witness Familiarization
- BMT Fleet Technologies: 'Fatigue and Fracture Analysis of Ship Structures' Certificate of Completion; course presenter on 'Viewpoint of the Underwriters' Surveyor'
- North of England P&I Association: Residential Course in Loss Prevention and P&I Insurance
 Pass with Distinction

PROFESSIONAL AFFILIATIONS

- Chairman: Association of Average Adjusters of the United States (2005-2006)
- Fellow: Institute of Marine Engineering, Science and Technology (FIMarEST)
- Member: Society of Naval Architects and Marine Engineers (SNAME)
- Member: International Institute of Marine Surveying (MIIMS)
- Member: Maritime Law Association, U.S. (non-lawyer)
- Associate Member: Association of Average Adjusters of the U.S. and Canada
- Associate Member: American Institute of Marine Underwriters (AIMU)
- Accredited (NY State) AIMU Hull & Machinery course instructor
- Past Member: American Bureau of Shipping, Special Committee on Ship Operations
- Past Member: Ship Technical Committee, International Group of P&I Clubs



APPENDIX B

John S. Poulson; Publications & Presentations

- The Future of Alternative Fuels and the Nuclear Option | Panel Member, Marine Insurance Americas conference New York, May 3, 2022
- Fuel Oil Challenges and 2020 | Presented at CMA Shipping Conference, Stamford, CT, April 2019
- Fuel Oil Challenges and 2020 | Presented at Marine Insurance London Conference, London, March 2019
- Fuel Oil Challenges Under Marpol VI | Presented at join Safety & Sea Conference hosted by Resolve Marine and the American P&I Club, 2018
- Fuel and FD&D | Presented to International Group of P&I Clubs, FD&D Managers Group, New York, NY, 2018
- "Ballast Water"- pub; International Marine Claims Conference Dublin presentation 2017
- "Ever Feel Like a Spare Part" pub; International Marine Claims Conference Dublin presentation 2016
- "E-Mission Control, We have a Problem" pub; the American P&I Club "Currents" periodical article on the problems encountered with operation on fuels necessary to comply with impending environmental legislation
- "Design or Latent Defect" A comparison of coverage under English, German, Norwegian and U.S. Law – pub; International Marine Claims Conference – Dublin joint presentation 2013
- "The Deadliest Cargo" pub; The Nautical Institute periodical "Seaways" article on the dangers of the carriage of nickel ore cargoes 2013
- "Watery Graves" pub; the American P&I Club "Currents" periodical article on the dangers of the carriage of nickel ore cargoes 2013
- "It Must be the Fuel" pub; International Marine Claims Conference Dublin presentation 2009
- *"Life at the Sharp End"* pub; International Marine Claims Conference Dublin presentation 2008
- "Human Error the Challenges Facing Mariners Today" pub; the International Union of Marine Insurance (IUMI) – Copenhagen conference address 2007



- "Where Do We Go from Here?" Chairman's address pub; the Association of Average Adjusters of the United States 2006
- "Bilge Water Discharge Still Hazy After All These Years" the American P&I Club "Currents" magazine articles
- "Hatch Covers An Open & Shut Case (Fact Fiction & Fallacies)" pub; the American P&I Club "Currents" magazine articles.
- "Fatigue & Fracture Analysis of Ship Structures"; course material "The Viewpoint of the Underwriters Surveyor" pub; British Maritime Technologies (BMT) 2004
- "Construction of Merchant Vessels in the U.S." pub; Lloyds of London Press 2003



APPENDIX C

John Stanley Poulson; Previous Testimony:

- 1) In the case of "Galatours" S.A., Seguros Sucre S.A., et al Plaintiffs vs. Braswell Shipyard Inc; Panama, Republic of Panama. Court trial testimony.
- 2) In the case of Hughes Brothers Inc. et al for Exoneration from or Limitation of Liability 05 CIV.4292; in case to be tried in New York Southern District Court. Deposition testimony
- 3) In the case of Bay Diesel Corporation vs. "Barges Inc." dba "Gateway Towing" Court of Norfolk, Virginia. Deposition testimony.
- 4) In the matter of the arbitration between Bay Diesel Corporation and "Barges Inc." dba "Gateway Towing". Arbitration hearing testimony, Norfolk Virginia.
- 5) In the case of James W. Jaikins and the Plaintiff Class vs. Caterpillar Inc., United States District Court, Eastern District of Michigan Southern Division Case No.04-73404. Deposition testimony.
- 6) In the case of Hornbeck Offshore Transportation LLC vs. Caldwell Marine International LLC United States District Court Southern District of New York Case No. 08 CV 0595. Deposition testimony.
- 7) In the case of AIG Global Marine and Energy vs. Atlantic Trader Navigation Ltd., United States District Court Southern District of New York Case No. 08 CV 3597 Deposition testimony.
- 8) In the case of Frescati Co., Ltd., and Tsakos Shipping & Trading S.A. for Exoneration from or Limitation of Liability 05 CV 305 and 08 CV 2898. United States District Court for the Eastern District of Pennsylvania. Deposition testimony.
- 9) In the case of KYLA Shipping vs. Swiss Re et al., Supreme Court of New York State. Deposition testimony.
- 10) In the case of Henry Marine Services vs. the City of New York, United States District Court Eastern District of New York 09-CV 3512 ERK/VVP. Court trial testimony.
- 11) In the case of Interlake Steamship Company vs. Van Enkevort Tug & Barge, Inc., et al., United States District Court, Western District of Michigan, Northern Division Case No.: 2:09 cv-74., deposition testimony.



- 12) In the case of Barges Inc. vs. National Union Fire Insurance Company of Pittsburgh Pennsylvania and Chartis Marine Adjusters Inc., deposition testimony.
- 13) In the case of Falcon Carrier Shipping Ltd. vs. ST Shipping and Transport PTE Ltd & Glencore Group, New York arbitration hearing testimony.
- 14) In the case of Matson vs. Cosco (Nantong) ICDR No. 50 125 T 00413 11, International Centre for Dispute Resolution, arbitration hearing testimony, San Francisco.
- 15) In the case of Bender Shipbuilding & repair Co. Inc. vs. Caterpillar Inc., et al No. CV 2010-901073 / Seacor Marine LLC vs. Caterpillar Inc., et al No. CV-2010-900126, deposition testimony.
- 16) In the case of Transport Desgagnes et al and London Underwriters and Institute of Lloyds Underwriters vs. Wartsila Canada Inc. and Wartsila Nederland B.V., court trial testimony Province of Quebec, Canada, District of Montreal Superior Court.
- 17) In the matter of arbitration between: Dampskibsselskabet Norden A/S Claimants / Charterers / Disponent Owners and Zamin Amapa Mineracao S.A., London, arbitration hearing testimony.
- 18) In the case of J.D. Irving Limited vs. Siemens Canada Limited, Maritime Marine Consultants (2003) Inc., New Brunswick Power Nuclear Corporation, Superport Marine Services Ltd., BMT Marine and Offshore Surveys Ltd. and Daniel Macpherson, carrying on business as Macpherson marine group. Federal Court of Canada, court trial testimony.
- 19) In the case of United States District Court Southern District Of Florida, Case No. 14-2427-Civ; Companhia Energetica Potiguar Vs. Caterpillar Inc., Caterpillar Americas Services Co. and Caterpillar Americas Co., deposition Testimony.
- 20) In the case of Connect Shipping Inc. & Machrimar Management S.A. vs Sveriges Angfartygs Assurans Forening (The Swedish Club) et al.; London Admiralty Court Testimony.
- 21) In the case of Karli Patrone; et al vs Echo Bay Marina, Deposition testimony.

John Poulson Fee Schedule

\$260 per hour